

## CLAIMS

What is claimed is:

- 1           1.       A cable harness comprising:  
2       a frame capable of being attached to a rack, the rack having a number of blades disposed  
3           therein, the frame including a number of channels, each channel for routing at  
4           least one cable from one of the blades and toward a rear of the rack; and  
5       a channel array capable of being coupled with the frame, the channel array including a  
6           number of channels, each channel for routing at least one cable from one of the  
7           blades and towards one side of the rack.
- 1           2.       The cable harness of claim 1, further comprising:  
2       a second channel array capable of being coupled with the frame, the second channel array  
3           including a number of channels, each channel for routing at least one cable from  
4           one of the blades and towards an opposing side of the rack.
- 1           3.       The cable harness of claim 2, wherein the frame defines a first bay for  
2       receiving the channel array and a second bay for receiving the second channel array.
- 1           4.       The cable harness of claim 3, wherein each of the first and second bays  
2       includes at least one guide element, the at least one guide element of each bay to position  
3       a channel array in that bay.

1           5.       The cable harness of claim 3, wherein each of the channel array and the  
2 second channel array is coupled with the frame using at least one fastener.

1           6.       The cable harness of claim 3, wherein each of the channel array and the  
2 second channel array is coupled with the frame by a snap fit.

1           7.       The cable harness of claim 1, wherein each of the channels of the frame  
2 routes the at least one cable into an open cavity of the rack and toward the rear of the  
3 rack.

1           8.       The cable harness of claim 7, wherein, at the rear of the rack, the at least  
2 one cable associated with each of the channels is routed upwards towards a top of the  
3 rack.

1           9.       The cable harness of claim 1, wherein each channel of the channel array  
2 includes a hook for receiving an anchoring device, the anchoring device for holding a  
3 number of cables.

1           10.      The cable harness of claim 1, wherein each channel of the channel array  
2 includes a pair of opposing slots for receiving an anchoring device, the anchoring device  
3 for holding a number of cables.

1           11.     The cable harness of claim 1, further comprising a cover capable of being  
2     attached to the frame, the cover overlying the channel array.

1           12.     The cable harness of claim 1, wherein each channel of the frame  
2     comprises a generally rectangular-shaped open channel having a floor and two opposing  
3     side walls extending upwards from the floor.

1           13.     The cable harness of claim 1, wherein each channel of the channel array  
2     comprises a generally rectangular-shaped open channel having a floor and two opposing  
3     side walls extending upwards from the floor.

1           14.     The cable harness of claim 13, wherein each of the channels of the channel  
2     array extends along an approximate ninety degree arc.

1           15.     The cable harness of claim 13, wherein the floor is generally semicircular  
2     in shape.

1           16.     The cable harness of claim 1, wherein each of the frame and the channel  
2     array comprises a plastic material.

1           17.     The cable harness of claim 16, wherein each of the frame and the channel  
2     array is constructed using a molding process.

1           18.     A cable clip comprising:  
2     a longitudinally extending body having a first end and an opposing second end;  
3     a number of clasps disposed on the body between the first and second ends, each of the  
4           clasps for holding a cable;  
5     a first coupling mechanism disposed at the first end of the body, the first coupling  
6           mechanism for attaching the cable clip to one end of another cable clip; and  
7     a second coupling mechanism disposed at the second end of the body, the second  
8           coupling mechanism for attaching the cable clip to one end of another cable clip.

1           19.     The cable clip of claim 18, wherein the first coupling mechanism is  
2     identical to the second connector.

1           20.     The cable clip of claim 19, wherein the first coupling mechanism is  
2     oriented 180 degrees relative to the second coupling mechanism.

1           21.     The cable clip of claim 20, wherein each of the first and second coupling  
2 mechanisms comprises:  
3 a resiliently flexible arm extending from one of the ends of the body and disposed on one  
4 side of the body, the flexible arm having a protrusion disposed at an outer end  
5 thereof; and  
6 a notch disposed on an opposing side of the body proximate the one end, the notch to  
7 receive a protrusion on a resiliently flexible arm of a coupling mechanism on  
8 another cable clip.

1           22.     The cable clip of claim 21, wherein each of the first and second coupling  
2 mechanisms further comprises:  
3 a pair of opposing guide posts disposed on the body proximate the flexible arm and  
4 extending from the one end of the body, the pair of opposing arms to mate with a  
5 pair of opposing guide surfaces disposed on another cable clip; and  
6 a pair of opposing guide surfaces disposed on the body adjacent to the opposing guide  
7 posts, the opposing guide surfaces to mate with a pair of opposing guide posts  
8 disposed on another cable clip.

1           23.     The cable clip of claim 21, wherein the resiliently flexible arm includes a  
2 handle, the handle comprising an angled extension extending from the outer end of the  
3 resiliently flexible arm.

1           24.     The cable clip of claim 18, wherein each of the clasps comprises:  
2     a first resiliently flexible arm extending from the body;  
3     a second resiliently flexible arm extending from the body and spaced apart from the first  
4         resiliently flexible arm;  
5     wherein a space between the first and second arms has a size greater than a diameter of  
6         the cable.

1           25.     The cable clip of claim 24, wherein an outer end of the first arm is  
2     separated from an outer end of the second arm by a distance less than the diameter of the  
3     cable.

1           26.     The cable clip of claim 24, wherein an equal number of the clasps is  
2     disposed on each of opposing sides of the body.

1           27.     The cable clip of claim 18, wherein the body comprises a plastic material.

1           28.     The cable clip of claim 27, wherein the body is formed using a molding  
2     process.

1           29.     A bundle clip comprising:  
2     a cylindrical shaped body extending from a first end to an opposing second end and  
3           defining an interior region having size sufficient to receive a number of cables;  
4     an entry disposed between the first and second ends and opening into the interior region,  
5           the entry having a size less than a diameter of one of the cables;  
6     a first coupling mechanism disposed on a side of the body, the first coupling mechanism  
7           for attaching the bundle clip to another bundle clip; and  
8     a second coupling mechanism disposed on an opposing side of the body, the second  
9           coupling mechanism for attaching the bundle clip to another bundle clip.

1           30.     The bundle clip of claim 29, wherein the body comprises a resiliently  
2     flexible material.

1           31.     The bundle clip of claim 30, wherein upon insertion of a cable into the  
2     entry, the body elastically deforms to expand the entry to a size sufficient to receive the  
3     cable.

1           32.     The bundle clip of claim 30, wherein the resiliently flexible material  
2     comprises a plastic material.

1           33.     The bundle clip of claim 32, wherein the body is formed using a molding  
2     process.

1           34.     The bundle clip of claim 29, wherein each of the first and second ends of  
2     the body proximate the entry are rounded.

1           35.     The bundle clip of claim 29, wherein each of the first and second ends of  
2     the body proximate the entry are semicircular in shape.

1           36.     The bundle clip of claim 29, wherein the first coupling mechanism  
2     comprises:  
3     a keyway disposed on an exterior of the body, the keyway to slidably receive a mating  
4         key disposed on a second bundle clip; and  
5     a resiliently flexible arm disposed on the exterior of the body proximate the keyway, the  
6         arm having a protrusion extending from an outer end thereof;  
7     wherein, upon insertion of the key of the second bundle clip into the keyway, the  
8         protrusion on the outer end of the arm mates with a corresponding notch on the  
9         second bundle clip.



1           37.     The bundle clip of claim 29, wherein the second coupling mechanism  
2 comprises:  
3 a key disposed on the exterior of the body, the key to slidably mate with a corresponding  
4 keyway disposed on a second bundle clip; and  
5 a notch disposed on the exterior proximate the key;  
6 wherein, upon insertion of the key into the keyway of the second bundle clip, the notch  
7 mates with a protrusion on an end of a resiliently flexible arm extending from the  
8 second bundle clip.

1           38.     The bundle clip of claim 29, wherein the first and second coupling  
2 mechanisms are separated by an angle of approximately 180 degrees.

1           39.     The bundle claim of claim 29, further comprising:  
2 a first support element extending from the body and positioned proximate the first  
3 coupling mechanism, wherein the first support element, upon coupling the first  
4 coupling mechanism with a second bundle clip, abuts an exterior surface of the  
5 second bundle clip; and  
6 a second support element extending from the body and positioned proximate the second  
7 coupling mechanism, wherein the second support element, upon coupling the  
8 second coupling mechanism with a third bundle clip, abuts an exterior surface of  
9 the third bundle clip.

1           40.     The bundle clip of claim 29, wherein the cylindrical shaped body  
2 comprises an oval shape.

1           41.     A rack mounted installation comprising:  
2 a rack, the rack comprising a generally rectangular housing having an interior cavity;  
3 a number of blades disposed in the interior cavity of the housing, each of at least some of  
4 the blades including a number of connectors, each connector for coupling with a  
5 cable; and  
6 a cable harness, the cable harness including  
7 a frame attached to the rack, the frame including a number of channels,  
8 each channel for routing at least one cable from one of the blades  
9 and toward a rear of the rack, and  
10 a channel array attached to the frame, the channel array including a  
11 number of channels, each channel for routing at least one cable  
12 from one of the blades and towards one side of the rack.

1           42.     The installation of claim 41, further comprising a second channel array  
2 attached to the frame, the second channel array including a number of channels, each  
3 channel for routing at least one cable from one of the blades and toward an opposing side  
4 of the rack.

1           43.     The installation of claim 41, further comprising:  
2     a first cable clip to hold at least one cable extending from one of the blades; and  
3     a second cable clip to hold at least one cable extending from one of the blades, the second  
4         cable clip having a coupling mechanism on one end coupled with a mating  
5         coupling mechanism on one end of the first cable clip.

1           44.     The installation of claim 43, further comprising:  
2     a first bundle clip to hold a group of cables associated with the first cable clip; and  
3     a second bundle clip to hold a group of cables associated with the second cable clip, the  
4         second bundle clip having a coupling mechanism on one side coupled with a  
5         mating coupling mechanism on one side of the first bundle clip.

1           45.     The installation of claim 43, wherein each of the first and second cable  
2     clips is holding cables associated with a same one of the blades.

1           46.     The installation of claim 45, wherein all cables associated with the same  
2     one blade are placed in one channel of the cable harness, the one channel comprising a  
3     channel of the channel array or a channel of the frame.

1           47.     A method comprising:  
2     securing a first set of cables extending from a blade in a first cable clip, the blade  
3           disposed in a rack;  
4     securing a second set of cables extending from the blade in a second cable clip;  
5     attaching the second cable clip to the first cable clip;  
6     inserting the first set of cables into a first bundle clip;  
7     inserting the second set of cables into a second bundle clip; and  
8     attaching the second bundle clip to the first bundle clip.

1           48.     The method of claim 47, further comprising routing the first and second  
2     sets of cables into one of a number of channels of a cable harness, the one channel  
3     routing the first and second sets of cables toward a raceway disposed adjacent to the rack.

1           49.     The method of claim 48, wherein the one channel routes the first and  
2     second sets of cables toward a side of the rack.

1           50.     The method of claim 48, wherein the one channel routes the first and  
2     second sets of cables toward a rear of the rack.

1           51.     A method comprising:  
2     disposing a first group of cables within a first channel of a cable harness, the cable  
3           harness installed on a rack, the first channel routing the first group of cables  
4           towards a side of the rack; and  
5     disposing a second group of cables within a second channel of the cable harness, the  
6           second channel routing the second group of cables towards a rear of the rack.

1           52.     The method of claim 51, wherein the first group of cables are each  
2     connected with a first blade disposed in the rack and the second group of cables are each  
3     connected with a second blade disposed in the rack.

1           53.     The method of claim 52, further comprising:  
2     securing each of the first group of cables within one of a first number of interconnected  
3           cable clips; and  
4     securing each of the second group of cables within one of a second number of  
5           interconnected cable clips.

1           54.     The method of claim 53, further comprising:  
2     holding the first group of cables within a corresponding first number of interconnected  
3           bundle clips; and  
4     holding the second group of cables within a corresponding second number of  
5           interconnected bundle clips.